prescribed those drugs from DPC/PDPS data collected between 1st April 2010 and 31st March 2012 at 1139 of acute care hospitals in Japan. Hospitals were classified into five categories (university, private, publi, social insurance group, and others). SQL Server 2008 R2 was used for data handling, R for data analysis, and ArcGIS for statistical analysis of geography. **RESULTS:** Generic drugs were least used amongst almost all types of drugs in university hospital and social insurance group. For prescription of generic drugs, private hospital was the most proactive, followed by public hospital. It was revealed, thorough comparison between 20% of medical care institutions that are the most proactive towards introduction of generic drugs and 20% of the least proactive, that the shifting progress was slower in bigger size medical care institutions. **CONCLUSIONS:** This study indicated that for effective promotion of generic drugs, it is important to establish plans for changing the policy of medical care institutes, which are amongst the bottom 20% of introduction rate, where a policy maker does not shift to generic drugs even in the area of expensive drugs such as anti anticancer agents and radio contrast agents.

PHP45

HEALTH TRANSFORMATION PROGRAM IMPACT ON IMPORT AND LOCAL PHARMACEUTICAL CONSUMPTION IN TURKEY

Ufuktepe B[1], Kockaya G[2]
[1]*Istanbul University, Istanbul, Turkey,* [2]*Health Economics and Policy Association, Ankara, Turkey*

OBJECTIVES: Health Transformation Program(HTP) started in year 2003 by MoH of Turkey. All health system changed dramatically. It had impact on all health consumptions and expenditures. The aim of this study is to show the impact of HTP on the imported pharmaceuticals(IP) and local manufactured pharmaceutical(LMS) sales in Turkey. **METHODS:** Pharmaceutical retail sales data in units and volume(US$) from year 1998 to 2012 were retrieved from IMS Dataview. Local and import consumption trends were reviewed. The data was analyzed with Microsoft Excel 2010. **RESULTS:** Total unit sales were 689M in 1998, 698M in 2002 and 1768 M in 2012; after 10 years of HTP. Total sales were 1937M, 2526M and 8000 M USD for the same years, respectively. Between 1998 and 2012, CAGR(Cumulative Annual Growth Rate) of unit sales was 7%, while the majority of this growth came from HTP(9,7% after HTP vs 0,3% before HTP). There was no significant change in unit sales between 1998 and 2002; total CAGR was 0,3%. Sales between 1998 and 2012 in USD had an average growth rate of 10,7%. Comparing CAGR for before and after HTP; LMP was 1,5% before and 7% after while IP showed an inverse ratio with the total and LMP values and was 23,5% and 13,1% before and after. In the beginning of the 15 years period market share for local manufacturing 92,6% in units and 80,8% in USD; in 2002 dropped down to 88,8% in units and 65,7% in USD, and finally in 2012 to 75,2% in units and 49,8% in USD. **CONCLUSIONS:** The percentage of IP both in units and volume increased in years. This increase may be caused by different reasons, particularly new oncology and biotechnology molecules. It was observed that the volume increase in IP or decrease in LMP was limited by the HTP.

PHP46

UNDERSTANDING PATTERNS OF MONITORING OF APPROPRIATE PRESCRIBING IN EUROPE

Schroeder C[1], Keja J[2], Hughes B[2], Toussi M[3]
[1]*IMS Health, Munich, Germany,* [2]*IMS Health, London, UK,* [3]*IMS Health, Paris La Défense, France*

OBJECTIVES: To analyse the current requirements and patterns for drug use monitoring in Europe and highlight new ways for pharmaceutical companies to meet these requirements **METHODS:** We combined three methods of data collection to characterise current requirements and patterns for drug use monitoring: 1) review of official reports by European agencies; 2) analysis of data elements on the European Medicines Agency (EMA) website; and 3) interviews with experts from pharmaceutical companies, facing requirements for conducting drug utilisation studies (DUS). **RESULTS:** The recent Good Vigilance Practice (GVP) established a clear regulatory framework for drug safety monitoring and calls for the assessment of the effectiveness of risk minimisation measures (RMMs). This should include the evaluation of their implementation and outcome. DUS provide simple metrics for monitoring of appropriate drug use, and thus the implementation of RMMs. We identified 28 drugs with DUS in their risk management plan and an additional 23 DUS requested by EMA. We observed a top total number of requests for DUS in the fields of contraception (n=10), infectious diseases (mainly HIV and hepatitis) (n=8) and diseases of the metabolism (mainly diabetes) (n=6) and less for other therapeutic areas. The main reasons for DUS requests were monitoring of off-label use (n=30) and new safety concerns (n=27). Experts confirmed an increasing demand for DUS. In order to optimise the RMMs, repetitive DUS in different points in time are necessary. This study analyses DUS' critical data elements allowing for the automation of such measurements. **CONCLUSIONS:** Current and future EMA practice for DUS seems to focus on new active substances, particularly in diseases of high public health relevance and infectious diseases. To meet this demand, pharmaceutical companies are required to propose more repetitive measurements of the drug use. This study identifies data elements allowing for the automation of such measurements.

PHP47

CATCHING THE LOW-HANGING FRUIT IN MEDICINES OPTIMISATION

Faria R, Sculpher MJ
Centre for Health Economics, York, UK

OBJECTIVES: The medicines bill in high income countries accounts for approximately 17% of total health care expenditure. However, around $500 million could be saved a year worldwide by optimising medicines use. This study aims to scope the evidence on the effectiveness and cost-effectiveness of interventions to address suboptimal use of medicines and pinpoint the evidence gaps to prioritise future research. **METHODS:** Systematic searches (up to February 2013) of the NHS Economic Evaluation Database, the Cochrane Database of Systematic Reviews and the Database of Abstracts of Reviews of Effects for systematic reviews on effectiveness or cost-effectiveness and for primary research on cost-effectiveness of interventions. Studies in English set in any country were included. **RESULTS:** Of the 646 records found, 108 studies met the inclusion criteria (29 cost-effectiveness studies (CES) and 81 systematic reviews on effectiveness (SRE)). The majority of CES addressed adherence (55%), followed by inappropriate prescribing (31%) and prescribing errors (28%). No studies addressed the full medicines pathway. A similar picture emerged for SRE at 67%, 15 and 11 respectively. Among the 15 types of outcomes used in CES, the top three were clinical (31%) measures of adherence (21%) and quality-adjusted life years (17%). In SRE, hospitalisations (43%), measures of adherence (23%) and mortality (21%) were the most frequent. **CONCLUSIONS:** Interventions to improve suboptimal use of medicines tend to be specific to a particular aspect of the pathway and/or to a particular disease area. Little consideration is made on how to improve medicines use in patients with co-morbidities and poly-medication. The medicines pathway is rarely examined holistically but in a fragmented manner, making it difficult to draw conclusions on which aspect of suboptimal use of medicines should be prioritised for investment.

PHP48

THE EFFECT OF REDUCED OR REMOVED COPAYMENTS FOR PRESCRIPTION MEDICINES ON ADHERENCE – A SYSTEMATIC REVIEW

Sinnott SJ, Sinnott CM, Whelton H
University College Cork, Cork, Ireland

OBJECTIVES: To examine the effect of removal or reduction in prescription copayments, in the absence of disease management plans, on adherence to prescription medications. **METHODS:** Six electronic databases were systematically searched for relevant articles, along with hand searches of references in review articles and the included studies. Studies were included if they involved an intervention which reduced or removed copayments and if the outcome was objectively measured adherence. Study designs permitted were randomised controlled trials, time series analyses, controlled before/after studies and cohort studies. Studies were excluded if the intervention was part of a disease management plan. Study exclusion, data extraction and quality appraisal were carried out by two independent reviewers. Data were qualitatively synthesised. **RESULTS:** Nine out of 40 studies were included. One study was an RCT; the remainder were all controlled before/after studies. There were 144,991 cases and 125,057 controls in this review. The mean age was 54.39yrs and 55.21yrs for the cases and controls respectively. 44.79% of the cases were female, whereas 49.54% of the controls were female. Four studies analysed the effect of reduced copayment, 4 studies analysed the effect of a removed copayment and 1 study analysed both. Only one study received a strong quality assessment, one study was rated as moderate, and the remainder were rated as weak. Seven studies showed a significant improvement in adherence. Two studies did not show an improvement in adherence. **CONCLUSIONS:** This review concludes that there is some evidence of small increases in adherence on the removal or reduction of copayments. However, confounders and biases between the included studies were variable. Future studies should concentrate on establishing associations between reduced cost-sharing and clinical and economic outcomes.

PHP49

PREVALENCE OF PHYSICIANS CAUSING POTENTIAL DRUG INTERACTIONS IN AMBULATORY CARE IN SWITZERLAND: A REPRESENTATIVE NATIONAL SURVEY

Bucher HC
Basel Institute for Clinical Epidemiology & Biostatistics, Basel, Switzerland

OBJECTIVES: No representative data on the quality of drug prescription exist in Switzerland. We analysed potential drug interactions (PDI) in primary care based on prescription data from 2010 from three large health insurers. **METHODS:** In our study population we identified based on the national drug formulary 494 drug-drug interactions (DDI) classes. Of those, 41 were from drug interaction severity classes I (contraindicated) and II (potentially contraindicated) and classified as PDI. PDI were calculated for two indicators with different denominators, 1) the total number of DDI and 2) the total number of patients potentially exposed to a PDI. For each physician we calculated the probability that the number of caused PDI was unlikely (p-value between 0.05 and 0.01; 'problematic prescription behaviour') and very unlikely (p-value <0.01; 'likely problematic prescription behaviour') to be explained by chance. **RESULTS:** Of 3.13 million individuals 1.34% were exposed to at least one PDI; figures increased to 3.78% and 4.40% in females and males aged ≥70 years. Of 20,710 physicians 42% caused at least one PDI. With DDI being the denominator 6.2% und 3.4% of general practitioners and 0.9% und 0.5% of specialists were classified with a 'problematic' and 'likely problematic prescription behaviour'. With the patient population being the denominator between 0.96% and 6.22% of physicians from all specialty groups had caused a PDI that was classified as 'likely problematic' (p-value <0.01). When combining both indicators 457 of 20'720 physicians (2.2%) had a prescription behaviour causing a PDI that in comparison to peers was highly unlikely to be explained by chance (p-value <0.01). **CONCLUSIONS:** A total of 2.2% of physicians in primary care prescribe during one year at least one drug combination that is classified as PDI. A linkage to other data sources would be needed to further classify PDI that put patients at serious risk for adverse drug reactions.

PHP50

A SYSTEMATIC EVALUATION OF DRUG-DRUG INTERACTIONS IN PRESCRIPTIONS; FACTS AND COMPARISONS

Ahmad M, Arshad W, Usman Minhas M
The Islamia University of Bahawalpur, Bahawalpur, Pakistan

OBJECTIVES: The study focus was to evaluate and compare the prescriptions for the encountered potential drug-drug interactions (pDDIs) and their different levels on the basis of onset, severity and documentation status, in a tertiary care hospital and community pharmacies in Bahawalpur, Pakistan. **METHODS:** Total 800 prescriptions, 400 from a tertiary care teaching hospital and 400 from community pharmacies, fulfilling inclusion criteria were collected thrice a week during a period of three months and were analyzed for potential drug-drug interactions using dug digest database, drug interaction checker of www.drugs.com and reference text